Missouri Department of Natural Resources
"Integrity and excellence in all we do"

Management of Seed-Cleaning Wastes

Solid Waste Management Program technical bulletin 7/2003

Introduction

This technical bulletin addresses management alternatives and regulatory requirements for wastes (screenings) generated in cleaning and processing seed crops such as fescue, rice, wheat, corn, soybeans and cotton. Since seed-cleaning wastes are regulated as solid waste under state and federal laws, they must be managed in compliance with these laws, and with other applicable requirements.

Three programs of the Missouri Department of Natural Resources administer and enforce requirements that may affect management of seed-cleaning wastes. They are the Air Pollution Control, Solid Waste Management and Water Pollution Control Programs.

Definitions

Passive composting: compost piles are not turned and free oxygen is not present, resulting in anaerobic conditions. This type of composting usually requires several years to obtain a stable compost and results in increased leachate production and odorous emissions. Passive composting as a management method for seed-cleaning wastes may require more environmental controls such as berms, buffer zones, retention ponds, etc., to help reduce pollution.

Active composting: compost piles are turned frequently or other aeration is provided to maintain adequate oxygen (aerobic) conditions. Supplements are added as necessary to obtain optimum moisture and maintain proper carbon:nitrogen ratio for complete composting. Composting is normally completed within 120 days.

Compost site size: the area within the composting perimeter including space for unloading, storing and handling materials and finished compost. It does not include buffer areas, parking lots, maintenance facilities and storm water control basins.

Buffer area: the grassed area down gradient of the storage and compost site.

Solid Waste Management Program Requirements and Information

The Missouri Solid Waste Management Law and regulations provide several options for managing wastes generated during seed cleaning:

1. Disposal in a permitted sanitary landfill. Some seed-cleaning wastes, such as those that easily become airborne, may need to be managed as special wastes according to the Special Waste Technical Bulletin, which is available from the Technical Assistance Program.
2. Management as a permit-exempt solid waste activity under 10 CSR 80-2.020(9), if pollution, a public nuisance or a health hazard is not created. Permit-exempt alternatives include:

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Using the seed-cleaning wastes in normal farming operations;

Using the seed-cleaning wastes in the processing or manufacturing of other products; or

Some types of composting. However, all composting operations must comply with the requirements of the Water Pollution Control Program. Co-composting seed wastes with municipal solid waste and/or sewage sludge requires a solid waste processing facility permit for construction and operation.

Water Pollution Control Program Requirements and Information

Water Pollution Control Permits

Storage, treatment or disposal of seed-cleaning wastes may require permits under the Missouri Clean Water Law, Chapter 644, RSMo, and regulations 10 CSR 20-6.010, 6.015 and 6.200. Permits issued under these rules are joint state and federal (NPDES) permits.

The department considers seed-cleaning waste storage and composting operations to be point sources and water contaminant sources due to the potential generation and discharge of leachates, especially from improper storage, composting or on-site disposal. Discharging untreated leachate during dry weather or storm water runoff may pollute receiving water bodies.

Permit Exemptions

A water pollution control permit is not required for the following:

1. Stock piles and compost sites that are under roof and either reuse leachates or haul leachates to a city treatment facility.

2. Seed-cleaning wastes that are directly applied on agricultural land. Application rates should be compatible with normal farming operations. Supplemental nitrogen should be applied following recommendations of the University of Missouri Extension Services or other professional agronomists. The seed-cleaning wastes should be incorporated as soon as practical.

3. Stockpiles or composting sites of less than two acres with no discharge to waterways. To achieve no discharge, the site must have storm water runoff collection and reuse onto the site and the floor under the compost or stockpile areas must be impermeable.

4. Seed-cleaning wastes or screens applied as seed or mulch to establish vegetation. The depth should not exceed one inch per year.

Permit Required

Regardless of the size of the site, Missouri law requires a water pollution control permit if solid waste or more than 5 percent sewage sludge is to be composted with the seed-cleaning wastes. However, adding amendments such as fertilizers, which may help the composting process, does not require a permit.

Site Restrictions

Storage and composting sites shall not be located within a 25-year flood plain or within a wetland as defined by the Army Corps of Engineers.

Air Pollution Control Program Requirements and Information

Like many other industries in Missouri, industries that generate seed-cleaning wastes (seed

chaff) are subject to the following state air pollution control regulations:

1. Any new facility or one that is planning an expansion or addition may need a construction and operating permit from the Missouri Air Pollution Control Program (see 10 CSR 10-6.060, Permits Required and 10 CSR 10-6.065, Operating Permits.) To find out if a permit is required, the facility should submit a permit application to the Air Pollution Control Program before construction. The program will notify the facility in writing about whether or not a permit is required.

2. All industries that generate seed chaff must comply with 10 CSR 10-6.170, Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin. This rule restricts fugitive emissions of particulate matter to the air beyond the property of origin. Fugitive emissions are those that do not come from a stack. Blowing particles from an uncontained or uncovered seed chaff pile may pose fugitive emission problems. Covering the pile or keeping it moist should reduce this problem.

3. All industries that generate seed chaff must comply with 10 CSR 10-3.080, Restriction of Emissions of Visible Air Contaminants. This rule sets a maximum allowable shade or opacity of visible air contaminants that can be discharged to the air by a facility. Dust and particles emitted to the air when seeds are processed or seed chaff is separated may cause opacity problems unless cyclones, enclosures or other mechanical equipment is used and maintained in good operating condition to prevent emissions from escaping to the outside air.

4. All industries that generate seed chaff must comply with 10 CSR 10-3.030, Open Burning Restrictions. For purposes of this rule, the Air Pollution Control Program considers seed chaff to be trade waste and therefore, prohibits open burning of seed chaff.

5. All industries that generate seed chaff must comply with 10 CSR 10-3.090, Restriction of Emissions of Odors, which restricts excessively odorous fumes. The most common source of odors from seed chaff is a chaff pile that is being improperly composted. Proper composting should not result in a noxious odor.

Additional Information

Anyone wanting additional information may contact the appropriate Department of Natural Resources' Regional Office or the programs listed below.

Missouri Department of Natural Resources
Air Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102
(573) 751-4817
www.dnr.mo.gov/alpd/apcp

Missouri Department of Natural Resources
Solid Waste Management Program
P.O. Box 176
Jefferson City, MO 65102
(573) 751-5401
www.dnr.mo.gov/alpd/swmp

Missouri Department of Natural Resources
Water Pollution Control Program
P.O. Box 176
Jefferson City, MO 65102
(573) 751-1300
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